App. Serial No. 10/527,775
Docket No.: NL020886

In the Claims:

Please amend claims 1, 5, 9, 12 and 15-16 as indicated below. This listing of claims replaces all prior versions.

1. (Currently Amended) A method for preserving linearity of a RF power amplifier, the power amplifier including a RF power output unit having a characteristic drive level and fed by a supply voltage, comprising:

measuring the output voltage of the RF power output unit;

comparing the measured output voltage to at least one threshold voltage to produce a control signal; and

~~adapting~~ reducing the drive level or increasing the supply voltage of the RF power output unit by means of the control signal to operate the output unit below its saturation level.

2. (Original) The method of claim 1, wherein the power amplifier includes a variable gain preamplifier supplying the drive voltage to the RF power output unit and wherein the control signal is used to adapt the gain of the preamplifier.

3. (Original) The method of claim 2, wherein the control signal is combined with the gain control signal of the preamplifier.

4. (Original) A method for controlling an antenna circuit comprising a RF power amplifier and a matching circuit by preserving linearity of a RF power amplifier, the power amplifier comprising a RF power output unit having a characteristic drive level and fed by a supply voltage source, comprising:

measuring the output voltage of the RF power output unit;

comparing the measured output voltage to at least one threshold voltage to produce a control signal; and

adapting the output matching circuit by means of the control signal to operate the output unit below its saturation level.

5. (Currently Amended) The method of claim 4, wherein the adapting of the output matching circuit is done by changing either ~~the~~ a magnitude or ~~the~~ a phase of ~~the~~ an impedance transform function.

6. (Original) The method of claim 4, wherein the adapting of the output matching circuit and the adapting of the supply voltage are combined with a power amplifier efficiency optimization in case of a multiple threshold detection by an analog-to-digital converter.

7. (Previously Presented) The method of claim 1, wherein the output voltage of the RF power output unit is rectified before being compared to the threshold voltage.

8. (Previously Presented) The method of claim 1, wherein the output voltage of the RF power output unit is compared to the threshold voltage by means of an operational amplifier.

9. (Currently Amended) The method of claim 8, wherein the output voltage of the RF power output unit is compared in at least two parallel operational amplifiers to threshold voltages to produce at least two control signals, and wherein the at least two control signals are fed to a ~~the~~ base-band controller.

10. (Original) The method of claim 9, wherein the at least two threshold voltages have different voltage levels.

11. (Previously Presented) The method of claim 1, wherein the supply voltage is adapted by a programmable DC-DC converter controlled by a base-band controller which is fed by the control signal.

12. (Currently Amended) A circuit for preserving linearity of a RF power amplifier wherein the power amplifier includes a RF power output unit having a characteristic drive level, comprising

a measuring unit measuring the output voltage of the RF power output unit;

a comparing unit comparing the measured output voltage of the RF power output unit to a threshold voltage to produce a control signal;

a drive level adaptation unit ~~adapting~~ reducing the drive level of the RF power output unit or a supply voltage adaptation unit ~~adapting~~ increasing a supply voltage of the RF power output unit to operate the output unit below its saturation level for preserving linearity of the RF power amplifier.

13. (Original) The circuit of claim 12, wherein the power amplifier includes a variable gain preamplifier supplying the drive voltage to the RF power output unit; and wherein the control signal is fed from the comparing unit to the preamplifier to adapt the gain of the preamplifier.

14. (Original) The circuit of claim 13, comprising a combining circuit between the comparing unit and the preamplifier combining the control signal with the gain control signal of the preamplifier.

15. (Currently Amended) A circuit for stabilizing an antenna circuit comprising a RF power amplifier and a matching circuit, wherein the RF power amplifier comprises a RF power output unit having a characteristic drive level, comprising

a measuring unit measuring the output voltage of the RF power output unit;

a comparing unit comparing the measured output voltage of the RF power output unit to a threshold voltage to produce a control signal; and

a drive level adaptation unit adapting the output matching circuit by means of the control signal thereby adapting the drive level of the RF power output unit to operate the RF output unit below its saturation level for preserving linearity of the RF power amplifier.

16. (Currently Amended) The circuit of claim 15, wherein the output matching circuit is configured to be adaptable with respect to either ~~the~~ a magnitude or ~~the~~ a phase of its impedance transform function.

17. (Previously Presented) The circuit of claim 12, comprising a rectifier between the RF power output unit and the comparing unit.

18. (Previously Presented) The circuit of claim 12, wherein the comparing unit comprises an operational amplifier.

19. (Original) The circuit of claim 18, comprising at least two parallel operational amplifiers to produce at least two control sub-signals, and wherein the at least two control sub-signals are fed to a base-band controller to adapt the gain of the RF power output unit to adapt the gain thereof.

20. (Previously Presented) An apparatus comprising a circuit as claimed in claim 12.